

Chapter 1

Overview

1.1 Introduction

The WSR-88D system was designed such that modifications to the hardware and software operating characteristics can be made through changes in adaptable parameter settings. These changes allow for system optimization based on meteorological, climatological, and regional variations, as well as user preferences.

Recognizing the rapidly changing operational environment and the Federal Meteorological Handbook Number 11 (FMH-11) update cycle, the Doppler Radar Meteorological Observations Working Group (DRMO-WG) chairman initiated the development of more responsive and user oriented adaptable parameters guidance documents. The WSR-88D Guidance on Adaptable Parameters Handbook Series, RPG, RDA and PUP, documents were designed to meet these requirements.

1.2 Policy

As mandated by the DRMO-WG, the WSR-88D Guidance on Adaptable Parameters Handbook, RPG has primacy in the area of RPG adaptable parameter guidance and supersedes all other adaptable parameter guidance, memos, and pamphlets issued prior to its publication. This handbook may be supplemented by agency or regional memoranda to clarify policy pertaining to parameters under Unit Radar Committee (URC) and Agency level of authority.

This document, as directed by FMH-11, Part A, serves to identify the specific adaptable parameters that fall under each Level of Change Authority (LOCA). It also defines the Radar Product Generator (RPG) system baseline adaptable parameter settings required to support the national radar network and provides guidance on certain URC and Agency level parameter changes, including parameter impacts and implications.

1.3 Levels of Change Authority (LOCA) Philosophy

A hierarchy has been established to ensure maximum flexibility while maintaining data and operational integrity of the WSR-88D units throughout the nation. This hierarchy is divided into three distinct levels: Operational Support Facility (OSF) to address engineering, meteorological, and scientific parameters, Unit Radar Committee (URC) for changes that only affect the operation of their particular WSR-88D unit, and Agency to control parameters that only affect local operations. Each level controls those engineering, operational, and meteorological parameters that best apply to its level of expertise and responsibility.

The definition for each level of change authority is provided in Chapter 2. Additionally, Chapter 2 lists each RPG adaptable parameter designated with a LOCA of URC or Agency and provides a cross-reference location into the appropriate chapter and section.

1.4 Document Design Characteristics

The “WSR-88D Guidance on Adaptable Parameters Handbook, Volume I, RPG” is designed to facilitate ease of use. The volume is divided into chapters, and each chapter is further subdivided into sections. Each major adaptable parameter subject area is addressed in an individual section. For example, the meteorological algorithms subject area is subdivided into 17 individual sections. Additionally, the page numbering for the document is not sequential throughout the document, but rather the page number identifies the chapter and page sequence within the chapter (i.e., the third chapter, fourth page is numbered 3-4).

For presentation in this document, the RPG adaptable parameters were divided into four groupings; Performance Optimization Parameters, Product Parameter Control, Communications Control, and Meteorological Algorithm Parameters. Each group is addressed in an individual chapter. The sections within each chapter are arranged in the same order as presented at the Unit Control Position (UCP). These sections provide an exact copy of the appropriate UCP screen showing each adaptable parameter accessible through the applications software. The baseline adaptable parameter settings are provided for reference.

1.4.1 Highlighting URC and Agency LOCA Parameters

All adaptable parameters, unless explicitly defined as URC or Agency LOCA in Chapter 2 of this document, or changes or updates to this document, are under the OSF LOCA.

In all subsequent chapters, adaptable parameters under the URC or Agency LOCA are highlighted in one of two ways:

In the case where every parameter addressed within a given section is under the URC or Agency LOCA, the appropriate LOCA is provided in the Section Title (e.g., **3.2 Alert Processing - URC LOCA**).

When only selected adaptable parameters within a section are under the URC or Agency LOCA, the specific parameters are outlined by a box (See Figure 1.4-1).

PRECIPITATION DETECTION						PAGE 1 OF 1
COMMAND: AD,*****,M,*****,P,						OPER A/
FEEDBACK:						
(M)odify, {LINE#} (E)nd (C)ancel (D)etele, {LINE#}						
N	Tilt Domain	Precip Rate Thresh (dBR)	Nominal Clutter Area (Km2)	Precip Area Thresh (Km2)	Precip Cat.	
1	0.0	2.0	-2.0	80	20	2
2	0.0	4.0	4.0	150	10	1
3	2.0	4.0	-2.0	80	20	2

Figure 1.4-1 Example of Highlighted Adaptable Parameter Values

1.4.2 Supplemental Information

When information is available concerning possible impacts that changes to these parameters will have on the system or algorithm performance, a brief explanation is provided. If additional references are available, pertinent papers and articles are cross-referenced.

1.5 Adaptable Parameter Change Process

1.5.1 Urgent Changes to OSF Controlled Adaptation Data Values

Under certain conditions in order to best support local warning and forecast capabilities, individual sites may need to quickly change the value of site-specific parameters which are controlled at an OSF LOCA. The need for change may result from local knowledge of radar performance, or of other geographic, seasonal, and/or climatological effects. The timeliness of these changes may preclude the normal configuration change process procedures. In these cases, the site may submit an immediate parameter change request to the OSF using the following guidelines:

Requests may only be made by the Chairperson of the WSR-88D Unit Radar Committee with the concurrence of the URC voting members. These requests will be made in writing to the Director of the OSF. The OSF will send a copy of the change request to the HQ AWS/SYDR, HQ NWS W/OSO112, and FAA NEXRAD Focal Point.

The Adaptable Parameter Working Group (APWG) technically evaluates the immediate parameter change request within 2 working days of receipt and then responds to the OSF Director.

The OSF Director, who is the signatory authority for delegating to sites the responsibility to make immediate changes to OSF level parameters, responds in writing to the originator of the immediate parameter change request using standard agency procedures. In addition, the Director will deliver copies of the response to OSF Configuration Management (CM) and to the agency WSR-88D focal points.

The requesting site can implement the change upon receipt of an affirmative response from the OSF Director.

1.5.2 Routine Changes to OSF Controlled Adaptation Data

The triagencies may request changes to OSF-controlled adaptable parameter values. General guidance for DOC (NWS) and DOD Requests for Change (RC) is provided below.

NWS-originated parameter RC will first require the requesting office to submit its request to their regional headquarters WSR-88D focal point. If approved, the regional headquarters will forward the RC to the NWS NEXRAD Committee (NNC) for review. The NNC will forward approved requests to the OSF by memo to the OSF Director, for the attention of the OSF CM Section.

DOD-originated parameter requests for change should be submitted on AF FM 3215, C4 Systems Requirement Document. The form is submitted for base approval, MAJCOM approval, then AWS approval. If approved at all levels, HQ AWS/SYDR will submit the CSRD as a RC to the OSF Director, for the attention of the OSF CM section.

Adaptable Parameter Change Process

Requests for Change received by the OSF Director are forwarded to the OSF CM Section for processing into the Configuration Change Request (CCR) format. The CCR is forwarded to the APWG for their review and recommendation. If approved by the APWG, a recommendation is then forwarded to members of the OSF Configuration Control Board and to the OSF Director, who will approve or disapprove the recommended change. If the Director approves the change, the OSF CM Section will implement the change.